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RESEARCH AND DEVELOPMENT

MONTHLY REPORT

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APRIL 1981

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PROJECT TITLE : BIOTECHNOLOGY

PERIOD COVERED : MARCH 17 - APRIL 16, 1981

WRITTEN BY : Schulthess-D. (DIS)

Two-Stage Denitration (1)

Trials on the two-stage denitration (2) were continued. In a first fermenter, running at dilution rates of 0.13 hr^{-1} or 0.24 hr^{-1}, a total denitration was achieved using the minimal amount of sugar. The denitrated extract, containing also the yeast cells, was mixed with untreated extract without additives. This mixture was fed into a second fermenter at a dilution rate of 0.1 hr^{-1}. The results are presented in the table below :

Table 1 : Two-Stage Denitration at Different Dilution Rates and Percentages of Treated Extract

D (hr^{-1}) first fermenter	Feed into the 2nd fermenter		Final denitration %	Sugar * saving %
	Denitrated extract %	Untreated extract %		
0.13	50	50	71	21
0.13	25	75	36	11
0.13**	50	50	81	31
0.24	50	50	66	16
0.24	75	25	89	14
0.24	25	75	28	3

* Percentage of nitrate that has been assimilated without adding extra sugar.

** Fed Batch System in the second fermenter. The fermenter was emptied totally as soon as it was full.

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The results indicate that, at a higher dilution rate in the first fermenter, the additional nitrate removed is lower. The best results were achieved using a 50 : 50 ratio of denitrated : non denitrated extracts. As reported earlier (2) a fed batch system in the second fermenter gave better results than a normal continuous system, although the quantity of the extract treated per time is the same.

Further trials will be concentrated on a 100% denitration by supplying the first fermenter with insufficient amounts of sugar and completing the denitration in a second one.

REFERENCES

(1) Berney-J., Notebook 800802, p. 48-50.

(2) Schulthess-D., Monthly Report, Biotechnology, March 1981.

Schulthess

DIS/jig/APRIL 21 1981

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PROJECT TITLE : PROTAGORAS

PERIOD COVERED : MARCH 12 - APRIL 16, 1981

WRITTEN BY : Bindler-G.-N. (GNB)

The purpose of Project Protagoras is to produce a tobacco with the least amount of proteins possible. In order to accomplish this, it is first necessary to divide the procedure up into stages and to obtain the maximum information about each extraction step. For this reason ØS-B-TOT tobacco was first extracted at pH 5,25 and was then re-extracted at pH 12,0. The change in pH from 5,25 to 12,0 gave a 50% greater yield of "proteins" than re-extraction of the same tobacco with water. With this two-step extraction, it was possible to solubilize at least 45% of the initial tobacco "proteins" in the liquid phase of the extraction.

Tobacco extracted by this method may additionally be treated with enzymes. Preliminary results indicate that the enzyme treatment releases some more proteins, that have not been washed out previously.

In addition, we began to cultivate some proteolitic microbiological strains and some preliminary observations were made about growth conditions and proteolitic enzyme production.

REFERENCES

(1) Notebook - Mangilli M.-F., No. 80.08.05 pp. 15-18.

(2) Notebook - Bindler G.-N. 1.

GNB/jig/APRIL 24 1981

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PROJECT TITLE : SAVOURY

PERIOD COVERED : MARCH 17 - APRIL 16, 1981

WRITTEN BY : Ghiste-P. (PAG)

Production of Reaction Flavours

Two flavours were produced by non-enzymatic browning reaction (Maillard reaction) under the following conditions :

	Flavour * HCl-37/2	Flavour ** HCl-37/3
Initial amino acid composition	Standard Hydrolysis HCl (6N)	Standard Hydrolysis HCl (6N)
pH of reaction	7.0	8.0
Neutralizing agent	NH_4OH	NH_4OH
Sugar	glucose	glucose
Percentage of reaction (%)	55	55
Temperature of reaction (^0C)	140	90
Time of reaction (hr)	72	140

* Reproduction of HCl-35/1 (1)

** The final pH-values of the flavour mixture of the aqueous reaction are acidic (pH between 3 and 4). Trial HCl-37/3 was carried out in order to determine the influence of the pH on flavourings.

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Panel Evaluation

At the present time our greatest problem is the evaluation of the product of the Maillard reaction.

Following discussions with PME - LEAF DEPARTMENT (2, 3, 4) trials should be conducted as follows :

a) 100% LTR + flavour = Italian treated Burley.

b) Greek treated Burley + flavour = US Burley treated.

REFERENCES

(1) Ghiste-P. Monthly Report, January 1981, p. 8.

(2) Letter from PME-LD to Schulthess-D., March 10, 1981.

(3) Letter from Ghiste-P. to PME-LD, April 7, 1981.

(4) Letter from PME-LD to Ghiste-P., April 14, 1981.

PAG/jig/APRIL 21 1981

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PROJECT TITLE : SALAMANDER-II

PERIOD COVERED : JANUARY - APRIL 1981

WRITTEN BY : Genoud-Y. (YVG)

1 Effect of Increased Path Length Between Smoking Machine and Cysteine Solution on ISH Values

Before continuing trials with a cold trap (1), the influence of the trap at room temperature on the ISH was checked. In fact this trap adds 180 cm between the smoking machine and the cysteine solution.

In addition, measurements which were made with the path length increased to 350 cm and to 520 cm.

The residual reactivity of the smoke gas phase was demonstrated by several measurements in which a second cysteine containing flask was placed after the first.

Table 1 summarizes the results. ISH_1 is the normal ISH and ISH_2 the value found with the second flask

Table 1 : Influence of Path Length on the ISH

cigarette	path length	ISH_1	ISH_2
ØS-B TOT	normal	35	35
	+ 180 cm	35	35
	+ 350 cm	34	36
	+ 520 cm	32	-
ØS-B-TOT/SPO	normal	20	
	+ 180 cm	20	
ØS-B-TOT/SPO II	normal	89	
	+ 180 cm	87	

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Comments

- There is no relation between the ISH value and the elimination of the following smoke components :

  - organic gas-phase
  - NO_2, N_2O_3, N_2O_5
  - CO_2, NH_3

- An almost complete elimination of NO leads to a decrease of about 50% in the ISH, but a decrease of 40% in the NO does not influence the ISH. In addition, the direct influence of NO is not proved by these experiments.

  The CO may contribute to ISH, but cannot be the only component responsible for it.

- A second flask containing the same amount of cysteine solution was placed after the normal reaction flask, for a measurement with a cold trap at -140^0C.

These results indicate that the reactivity of the gas-phase does not change with increased path length. These path length increases also correspond to increased age of the gas-phase. In conclusion, those compounds reacting with cysteine are only stable compounds and not free radicals, which would be too unstable to remain in the gas-phase after the traps.

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2 Effect of Cold Trapping of the Gas-Phase on ISH

The gas-phase of 3 different cigarettes (from Project SPOTLESS) was trapped at -117^0C, -130^0C, -140^0C, -150^0C, 160^0C and -165^0C.

The ISH was measured in each case. The NO and CO deliveries after the traps were also measured. The complete elimination of the organic components of the gas-phase was demonstrated at -117^0C.

Table 2 shows all the results obtained with the cold traps.

Figure 1 illustrates the variation of ISH with cold traps at different temperatures.

The value of ISH_2 was the same as that at 20^0C.

The reactivity and the behaviour of the smoke with cysteine remains constant even when the main part of the gas-phase is eliminated.

3 Continuation of Work

Trials are presently under way using pure gases alone or in mixtures (NO, CO, O_2) to see their effects on the cysteine.

A study concerning the relation between the concentration of the cysteine solution and the number of cigarettes smoked is also under way.

These last mentioned results will appear in the next Monthly Report. A final Report on Project SALAMANDER-II is being prepared.

REFERENCE

(1) Genoud-Y. Monthly Report p. 12 (November 1980).

YVG/jig/APRIL 21 1981

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Table 2 Influence of the Cold Traps on ISH, NO and CO

Cigarette	Temperature °C	ISH %	NO decrease %	CO decrease
ØS-B-TOT	20	40	10	0
	-117	45	23	0
	-130	45	30	0
	-140	47	36	0
	-150	32	50	0
	-160	28	86	0
	-165	20	98	0
ØS-B-TOT/SPO	20	20	NO level too low to be significant for measurable differences	0
	-117	20		
	-140	14		
	-160	9		
	-165	7		0
ØS-B-TOT/SPOII	20	87	10	0
	-117	86	54	0
	-140	84	60	0
	-150	72	83	0
	-160	61	88	0
	-165	48	96	0

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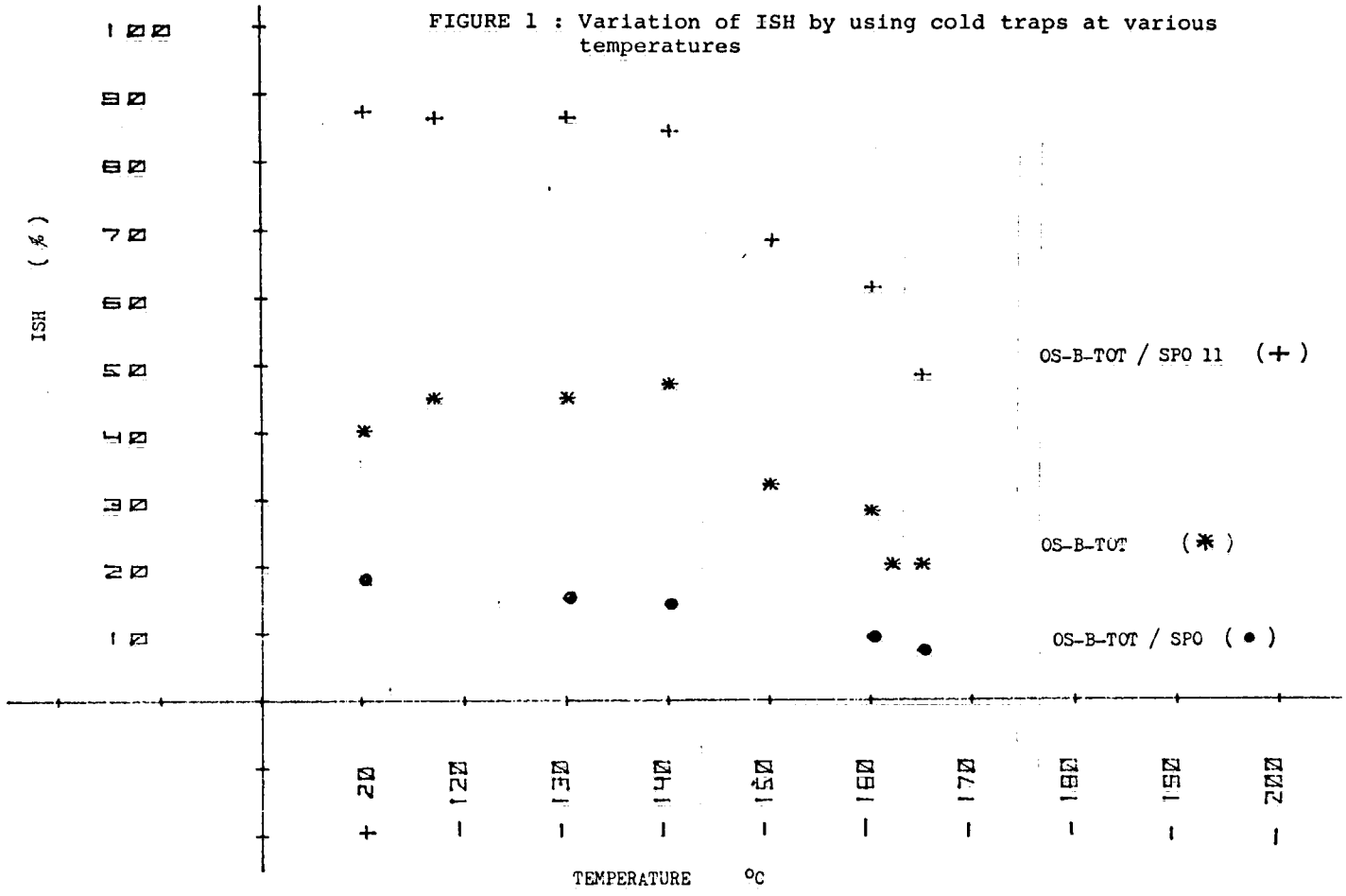
FIGURE 1 : Variation of ISH by using cold traps at various temperatures



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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : SALAMANDER–II

PERIOD COVERED : MARCH 1 - APRIL 16, 1981

WRITTEN BY : Murray-M. (MUM)

Equipment

HPLC and anciliary equipment have been ordered. Ventilated smoking machine hoods have been delivered and installed. A 30-port smoking machine is being equipped with sequential Cambridge and electrostatic smoke traps to test the hypothesis that charged species may be responsible for ISH activity.

Michael Murray

MUM/jig/APRIL 21 1981

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PROJECT TITLE : LAUNDRYMAN

PERIOD COVERED : MARCH - APRIL 15, 1981

WRITTEN BY : Piadé J-J. (JJP)

Project Work

Influence of the blend

Statistical data treatment was initiated on the TLA values stored on the APL system.

Multiple linear regressions were performed on 250 samples of flue-cured tobaccos, to investigate possible correlations of various parameters with the CO and CO/(DPM-SN) analytical values. More analysis is needed, but the most significant parameters for the flue-cured tobaccos seem to be the Ca and sugar levels, together with the RTD and the tobacco weight. Comparisons will be made with other tobaccos.

Filler Modifications

Examination of the SPOTLESS-I results (1) showed that the extraction performed involved 50 to 70% of the initial hot water solubles. The CO yields of the standard and the washed tobacco cigarettes can be compared provided that the RTD's of both cigarettes are sufficiently close to each other.

CO reduction appears to be comparable to the weight reduction. On average, the CO/tar ratio was increased by the extraction by about 10%.

In order to further investigate the effect of tobacco extraction on the CO delivery, a series of extractions followed by fractionation of the extract and respraying have been started on the laboratory scale.

REFERENCE

Moser F. Monthly Report February 1981

JJP/jig/APRIL 21 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : ROSA

PERIOD COVERED : MARCH 1 - APRIL 16, 1981

WRITTEN BY : Murray-M. (MUM)

Bibliography

A literature search has been carried out on AQUARIUS on data bases BIGL and PAOD. A number of possible approaches to the reduction of mainstream and sidestream smoke nitrosamine concentrations have been identified.

Future Plans

Cigarettes from the series 4058-BU - Burley type will be prepared with increased reducing sugar content to test the possible nitrite scavenger effect. Other reducing agents have been ordered for comparison purposes.

It is hoped to reduce mainstream nitrosamines by a combination of dilution with increased filter length or a less volatile plasticizing agent.

MUM/jig/APRIL 21 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : ANALYTICAL INVESTIGATIONS

PERIOD COVERED : MARCH 16 - APRIL 16, 1981

WRITTEN BY : Moser-F. (FMO)

Service for Other Groups

The following analytical determinations were carried out :

- Ca, K and Mg in 18 tobacco samples
- Ca, K and Mg in 5 extracts submitted by Process Development (NINO)
- SH index in 50 TLA samples
- Nicotine and minor tobacco alkaloids (nornicotine, myosmine, anabasine, anatabine and nicotyrine) in 6 cigarette brands and in 3 leaf tobacco samples.

F. Moser

FMO/jig/APRIL 21 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : ANALYTICAL INVESTIGATIONS

PERIOD COVERED : MARCH - APRIL 15, 1981

WRITTEN BY : Piadé-J-J. (JJP)

HPLC

The RI detector was installed on the HP 1084 and performance optimisation of the LC system carried out, requiring notably detector cell thermostatisation.

Detection limit for fructose was brought down to approximately 1 µg.

Radiocompounds

A recovery check by ^{14}C standards was carried out on the work-up for organic acids analysis by GC(1).

REFERENCE

(1) Memo March 25, 1981, from Gruring-D.

JJP/jig/APRIL 21 1981

00014426

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : ANALYTICAL INVESTIGATION

PERIOD COVERED : MARCH - APRIL 16, 1981

WRITTEN BY : Lecoultre-E. (ETL)

Organic Acids by GC

Reaction parameters for the derivatization of carboxylic acids into their ethylesters (1) are now fixed. Recovery and reproducibility for acid standard mixtures and standard mixtures added to fermented tobacco extracts are presently being investigated.

Total Phenols in Tobacco Smoke : Method Modification

In order to analyse total phenols in the smoke of some experimental cigarettes the following modifications have been made to the PM Analytical Method S-5A (2):

1) Predistillation of the methanolic extract of the Cambridge filter pad in a basic medium (elimination of neutral and basic interferences) prior to steam distillation of the phenols in an acidic medium.

2) Modification of the flow chart on the analytical module of the Technicon instrument.

No significant difference between the two methods has been found (Table 1).

Routine Analyses

- $(GC)^2$ analyses of 40 triacetin used in our European subsidiaries for the specification group (3).

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RECOVERY TEST

TABLE 1

	µg phenol added 100ml^{-1}	µg phenol found 100ml^{-1}	recovery	µg cig.
With predistillation in	0	113		43.37
basic medium	25	140	108%	
	50	167	108%	
	75	200	116%	
Without predistillation	0	127		49.4
	25	151	96%	
	50	180	110%	
	75	211	117%	

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- Phosphate and sulfate (10) for QC, Process Development and Biotechnology.

- Amino acids (50) for Biotechnology (Project SAVOURY).

REFERENCES

(1) Lecoultre-E., PME Monthly Report, February 1981.

(2) Baker, Handy, PM Analytical Method Number S-5A, April 1973.

(3) Oral request from Bel-T. to Lecoultre E. April 10, 1981.

S Lecoultre

ETL/jig/APRIL 21 1981

000144431

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : PRODUCT RESEARCH

PERIOD COVERED : MARCH 18 - APRIL 17, 1981

WRITTEN BY : Genoud-Y. (YVG)

Analysis of Plasticizers in Filters

The $(GC)^2$ method developed for triacetin measurement (1) has been applied to the analysis of triethylene glycol diacetate in filters of competitor brands. This completes our review of the triacetin situation (2).

In Table 1, information concerning country, manufacturer and brand name, as well as triacetin and triethylene glycol diacetate (TEGDA) concentrations in cellulose acetate filters are given.

A simple method to analyse (simultaneously) polyethylene glycol (Carbowax 400, 550, 600 and 750) by using direct derivatisation of the filter extracts did not give the expected results. Another method should be developed to analyse these plasticizers.

Capillary Columns

- 2 fused silica capillary columns were prepared for Lecoultre-E. (GC^2/MS) and one for Moser-F. (Headspace Analysis).
- A 50m x 0.5 mm i.d. glass capillary column is being treated for Moser-F.

Adsorbents

On a request from Product Development (3), a new type of adsorbent was investigated.

Name of adsorbent : Diatomite
Manufacturer : Wüthrich - Yverdon (Switzerland)

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Retention of gas-phase components :

- In powder form : impossible to use Diatomite

- Impregnated on pumice stone :

Organic gas-phase	: no retention
NO	: 10% retention
CO	: 13% retention

REFERENCE

(1) Genoud-Y. "The Analysis of Triacetin in Filter Material by Capillary GC" - Analytical Method (February 1981).

(2) Genoud-Y. Monthly Report, pp. 1-8 (December 1980).

(3) Letter from Krasna-B. to Genoud-Y., (March 23, 1981).

YVG/jig/APRIL 21 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Table 1 : Triacetin and Triethylen Glycol Diacetate (TEGDA) in Competitive Brands

Manufacturer	Brand Name	Triacetin CA Filter %	TEGDA CA Filter %	Triacetin/ TEGDA proportions
SWITZERLAND				
BURRUS	Parisienne	6.7		
	Parisienne Super	8.5		
	Kent Special (mild)	5.4		
	Select	6.8		
	Select extra légère	7.7		
	Select spec. mild	8.7		
	Gallant Trend	8.0		
	Gallant Filter	7.3		
	Virginie Filter	0		
BAT	Marylong	7.0		
	Marylong extra	0	8.2	0-100
	Marocaine	0		
	Marocaine mild	0		
	Marocaine extra	0		
	Krone Extra mild	8.6		
REYNOLDS	Camel Filter	6.0		
	Camel mild	6.1		
LAURENS	Dunhill Intern.	9.3		
	Dunhill Sup. mild	11.0		
	Stella Super	0	10.4	0-100
	Stella Douce	0	10.0	0-100
RINSOZ-ORMOND	Gauloise	0		
	Gauloise Jaune	0		
	Gauloise Disque d'Or	0		
REEMTSMA	R 6	4.2		
	Reemtsma	0		
GERMANY				
BAT	Krone	9.9		
	HB Kronen Filter	12.2		
	Pall Mall King Size	12.2		
REYNOLDS	Camel	8.1		
	Reyno Menthol	10.0		

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Manufacturer	Brand Name	Triacetin CA Filter %	TEGDA CA Filter %	Triacetin TEGDA proportions
AUSTRIA T.	Hobby Extra	10.9	0	
REEMTSMA	Ernte 23	7.9	0	
	R6	10.1	0	
	Peter Stuyvesant	7.6	0	
BRINKMANN	Dunhill Intern.	6.8	0	
	Peer 100	7.4	0	
UK				
IMPERIAL T.	Vanguard	2.2	0	
	John Player king size	5.8	0	
	John Player special	8.4	0	
	John Player Vanguard	4.0	0	
	Lambert-Buttler	7.1	0	
	Lambert-Buttler extra mild	9.3	0	
	Embassy No. 1	5.1	0	
GALLAHER	Benson and Hedges	7.8	0	
	Gallaher Lights	7.5	0	
	Winston Light	8.6	0	
	Silk Cut	8.4	0	
CARRERAS ROTHMANS	Peter Stuyvesant			
	Peter Stuyvesant extra mild	9.0	0	
	Dunhill King Size	12.5	0	
	Rothmans King Size	6.0	0	
BAT	555	10.4	0	
FRANCE				
REYNOLDS	Winston King Size	6.4	0	
	Camel	6.4	0	
	Camel mild	5.0	0	
SEITA	Gauloise Caporal	0	0	
	Royale	9.1	0	
	Rich and Light	0	0	
	Gallia	7.4	0	

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Manufacturer	Brand Name	Triacetin CA Filter %	TEGDA CA Filter %	Triacetin TEGDA proportions
TURMAC INT.	Peter Stuyvesant	8.4		
	Rothmans KS	13.5		
CARER. ROTH.	Dunhill Intern.	11.4		
LANDEWYCK	Kent spec. mild	5.1		
ITALY				
REEMTSMA	R6	5.2	0.3	94.5-5.5
	Astor mild	8.2		
BAT	HB Crown filter	12.9		
BRINKMANN	Lord Extra	6.3	2.0	76-24
MONITAL	MS International	6.3		
	MS King Size	7.7		
	Lido F.	5.8		
	Gallant	0	9.7	0-100
AUSTRIA T.	Milde Sorte	8.4		
	Hobby Extra	10.8		
REYNOLDS	Winston	6.1		
CARRERAS ROTHMANS	Rothmans King Size	9.2		
LANDEWYCK	Kent F.	5.9		
BELGIUM				
TABACOFINA	Belga	6.9		
GOSSET	St. Michel F.	9.2		
CINTA	Bastos	9.4		
	Gauloise Caporal	0		
ODON/WARL	Boule d'Or KS	8.2		
LANDEWYCK	Kent	5.5		
INTER.SALE	Peter Stuyvesant	9.1		
JUBILE	Richmond	10.0		

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Manufacturer	Brand Name	Triacetin CA Filter %	TEGDA CA Filter %	Triacetin TEGDA proportions
AUSTRIA				
AUSTRIA	Milde Sorte	9.4		
HOLLAND				
BAT	Gladstone Mild	7.8		
	Belinda	7.8		
TURMAC INT.	Pall Mall Export	10.7		
	Peter Stuyvesant	10.9		
REYNOLDS	Camel	5.6		
LAURENS	Caballero 1	7.2		
	Caballero 2	7.4		
NIEMEYER	Roxy Dual	7.3		
YUGOSLAVIA				
TVO. ROVINJ.	Milde Sorte	6.0		
TVO. LJUBL	Astor Mild	7.9		
TVO. ZAGREB	Lord Extra	8.8		
DUVA. VRAN.	Winston KS	8.4		
NIS	Kent KS	6.9		
TUT. PRILEP.	HB Crown Filter	8.7		
FINLAND				
AMER. TUPP	Colt	8.9		
NORWAY				
SUOMEN T.	Pall Mall KS	0.4	10.3	4-96
	Pall Mall Mild	1.2	8.8	12-88
AUSTRIA T.	Milde Sorte extra mild	11.9		

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Manufacturer	Brand Name	Triacetin CA Filter %	TEGDA CA Filter %	Triacetin TEGDA proportions
TIEDEMANNS	Prince of Blends	4.9		
SWEDEN				
SWEDISH T.	Blend F.	8.3		
	Commerce	10.9		
BLENDS	Prince Skan.	4.3		
DENMARK				
SKANDIN T.	Prince Light	4.9		
	Look Super	11.0		
	Look Light	4.9		
	Prince of Blends	5.8		
GREECE				
PAPASTRATOS	Old Navy	6.8		
	Astor F.	3.7		
MOROCCO				
REGIE MAROC	Casa Sport Olympic	7.0		
EGYPT				
BAT	Kent Light de Luxe	6.1	0.4	94-6
EASTERN TOB.	Cleopatra KS	7.9		
	Cleopatra 100s	12.3		
CARRERAS ROTHMANS	Rothmans KS	6.2		
GALLAHER	Silk Cut KS	6.8		
DUBAI				
CARRERAS	Craven A	6.2	0.4	94-6
ROTHMANS	Rothmans KS	7.8		
LORILLARD	Kent	6.4		
AMERICAN T.	Carlton 100	3.0		

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Manufacturer	Brand Name	Triacetin CA Filter %	TEGDA CA Filter %	Triacetin TEGDA proportions
BAHRAIN				
BAT	Kent Golden Light	5.9		
CARRERAS	Craven A	8.4		
ROTHMANS	Rothmans KS	6.0		
AMERICAN T.	Carlton	3.0	3.4	47-53
GALLAHER	Silk cut extra mild	5.1		
LORILLARD	Kent Luxe	3.2		
REYNOLDS	Winston	5.9		
LEBANON				
PMI-US-EXP	Merit	7.6		
REYNOLDS	Winston Light 100s	4.4		
SAUDI ARABIA				
AMERICAN T.	Carlton 100	2.4		
REYNOLDS	Winston KS	5.8		
BAT	Kent Golden Light	5.6		
GALLAHER	Silk Cut Extra Mild	7.8		
CARRERAS ROTHMANS	Craven A	6.4	0.4	94-6

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

LEAR 1-17-2 (MLK LEAR trial 1 without Burley treatment)
LEAR 1-17-3 (100% Burley LEAR trial 1 without Burley treatment)

Analyses on these four cigarettes are in progress.

3. PILOT-PLANT

See monthly report : "Pilot-Plant Operations" April 1981, by N. Lüthi.

4. NINOMASS

The final report on the test using NINOMASS as chicken fodder was received from UFA (3). In principle, 6% NINOMASS can be used in animal fodder, but further trials are necessary to clear up some details (4).

5. MISCELLANEOUS

5.1. During the second week of April, Mr. Schulthess and the undersigned attended the Second European Congress of Biotechnology in Eastbourne (5).

5.2. A project presentation on strip-denitration was given to R&D staff by Mr. Lüthi and the undersigned on March 31.

6. REFERENCES

1. Ruf-C Monthly report : (March 1981)
2. Borgognon-D Monthly report : (April 1981)
3. Pfirter-HP : Versuchsbericht über die Prüfung von Hefe der Firma Philip Morris als Bestandteil von Geflügelmastfutter : (March 1981)
4. Karbacher-P Monthly report : (April 1981)
5. Schulthess-D and Ruf-C : "Report on the Second European Congress of Biotechnology" (April 1981)

CLR/sde/APRIL 23 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : PROJECT LEAR, CIGARETTE PROTOTYPES

PERIOD COVERED : MARCH 20 - APRIL 16 1981

WRITTEN BY : Borgognon-D. (DIB)

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1. Control cigarettes

a) The first cigarette produced was the 100 per cent untreated Burley. The Burley tobacco was only humidified with the Mallet and was then cut (1+ 2). The code of this cigarette is LEAR 0-17-3.

b) The second cigarette made was the MLK cigarette without Burley treatment. The pre-cutting solution was applied to all the other components apart from the Burley, the expanded stems and the expanded strips. The after-cut solution was applied to all the tobacco (1+ 2). The code of this cigarette is LEAR 0-17-2.

2. Trial cigarettes

a) The third cigarette produced was the 100 per cent extracted and re-applied Burley without denitration (1 + 2). Its code is LEAR 1-17-3.

b) The fourth cigarette produced was the MLK cigarette with extracted and re-applied Burley. It had undergone the same treatment as LEAR 0-17-2. Its code is LEAR 1-17-2.

3. Analyses

All these control and trial cigarettes were given to the smoking laboratory for analyses. The HWS analyses of these blends will be carried out in the pilot plant laboratory, and the chloride, ash, potassium, calcium and SiO_2 analyses at the QC laboratory. The analyses of moisture-equilibrium and filling power will be done by the Product Development Department.

4. Burley treatment simulation

In order to evaluate the product "LEAR", it is necessary to simulate the Burley treatment. Burley tobacco of the MLF current production has been used. The Burley casing was applied in the Quester casing drum. The temperature of the casing was 70°C and the temperature of the tobacco after casing was between 40 and 45°C. The moisture-content of the tobacco was between 28.5% and 33% OV. The drying of the tobacco was carried out in the FTR Proctor and Schwartz using a small separate tray travelling through the installation together with the other tobacco. After drying the

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moisture content was between 17% and 19.5%. The Burley top flavour was then applied to the tobacco. The moisture-content after addition of the flavourings was between 24% and 28% OV. This tobacco should be used in the manufacturing of the cigarettes LEAR O-17-1 and LEAR O-17-4 (1).

REFERENCES

1. "P-V de la séance de planification du projet LEAR", Ruf-C (March 4 1981)

2. Borgognon-D, Notebook 791104 P 32 - 42.

D. Borgognon

DIB/sde/APRIL 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : PILOT-PLANT OPERATIONS

PERIOD COVERED : MARCH 23 - APRIL 16 1981

WRITTEN BY : Lüthi-N. (NIL)

Application of the extract to the strips

The parameters such as nozzle size, spraying pressure, etc for the application of extract to strips by using the Quester casing cylinder (1) were defined.
Therefore we were able to prepare the strips (2) which are used for the fabrication of the LEAR cigarettes 1-17-1 to 4 (3).

Rotocell extractor

By the end of March the FTR Engineering Department had finished work on the construction of the continuous feeding system for the rotocell extractor.
Since then this installation has been set up in the pilot plant.
The first trials with this feeding system showed fairly satisfactory results, nevertheless there are still some modifications and regulations to be made.

REFERENCES

1. Ruf-C Monthly report : "Pilot-Plant Operations" (March 1981)
2. Perrinjaquet-R Notebook 810103 p 20 - 25
3. Borgognon-D Monthly report : "Project LEAR, cigarette prototypes" (April 1981)

U. Lüthi

NIL/sde/APRIL 23 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : RECONSTITUTED TOBACCO

PERIOD COVERED : MARCH 20 - APRIL 16 1981

WRITTEN BY : Karbacher-P. (KPA)

Refiner gaskets

In mid-year 1980 the problem of how to extend the lifetime of the refiner gaskets was studied.
During the first week of April, longer gaskets were built in with modified gasket-supports. Up till now, the new joints have proved to be satisfactory.

Steel belt

A deformation of the steel belt was again observed. In the middle of the belt a convexity of a few milimeters was measured. The last re-flattening operation was carried out on November 4 1980. Sandvik, the steel belt supplier, was contacted. According to Sandvik, it is impossible to re-flatten the steel again.
It is planned to change the steel belt during the week of May 4 - May 8.

Dust for Monique/RCB production (1)

At the present time, all the dust obtained in Onnens is sieved in two stages: firstly it is passed through a 80-mesh sieve and secondly through a 100-mesh sieve. Dust >80 mesh is sent to Le Mans, dust <100 mesh is thrown away. For the Monique/RCB production <80 mesh, >100 mesh dust is used.
Due to the reduced cigarette production in Serrières, our dust stock is decreasing rapidly. A trial was carried out with 140-mesh instead of 100-mesh sieves in order to reduce the dust part that is thrown away.

Dust	2 Sieve stages 80 and 100 meshes (current)	2 Sieve stages 80 and 140 meshes (trial)
>80 mesh sent to Le Mans	65.8 %	65.6 %
<80 mesh, >100 mesh for Monique/RCB production	22.6 %	28.2 %
Dust thrown away	11.6 %	6.2 %

Table 1: Comparison of dust sieved with different mesh sizes

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Dust samples were taken for SiO_2 analyses.
A decision to use the 140-mesh sieves or not will be taken once the SiO_2 results have been obtained.

REFERENCE

1. Karbacher-P "Essai de tamisage avec des tamis 140 mesh" (April 16 1981)

KPA/sde/APRIL 23 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : UNIT OPERATIONS I

PERIOD COVERED : DECEMBER 25 1980 - APRIL 16 1981

WRITTEN BY : Karbacher-P. (KPA)

NINOMASS

The NINOMASS is a yeast product which is separated from the denitrated liquor in the pilot plant by centrifugation. After drying it was analysed and some results are shown in the following table :

Lab-Analyses		
Crude ash	g/kg	116
Crude protein	g/kg	360
Crude fat	g/kg	10
Crude fibres	g/kg	20
Magnesium	g/kg	4.5
Calcium	g/kg	10.9
Potassium	g/kg	93.0
Lysine	g/kg	25.4
Methionine	g/kg	4.1
Cystine	g/kg	4.1
Nicotine	ppm	400 - 500

To see whether this protein-containing product could be used as a component of animal fodder, VLGZ, a co-operative society in the agricultural sector was contacted. They organized a trial which was started on October 3, 1980 and which was continued until November 14, 1980.

Objective of the trial

- To use NINOMASS as a component of chicken fodder.
- To check its nutritive value and to see whether any side effects occur due to some particularities of our yeast.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Planning of the trial

Chickens were chosen mainly for the following reasons :

- Chickens have a high growth rate.
- Chickens are very sensitive with respect to variations in their protein and energy supply.
- Chickens also react very sensitively to imbalances and to non-physiological components of the fodder.

It was decided to use 6% NINOMASS in the trial fodder blend and this replaced 6% of the soja content of the control. A second control blend was used with a lower crude protein-content with added amino acids in order to reach "normal" amino acid levels.

Implementation of the trial

The trials were carried out using two groups of male and female chickens of the Hubbard breed. The animals received the fodder in the form of pellets ad libitum and the water supply was unlimited, according to current practice in poultry fattening.

Results

The results are presented in a comprehensive report (1) which we received recently. In short it can be said that no particular differences were observed between the 3 fodder blends with respect to fodder consumption, general behaviour and growth. However a slight increase in the death rate was noticed within the group of NINOMASS-fed animals during the last two weeks of the trial. Some differences with respect to excrement-consistency were also noted.
The report states that in principle our yeast product can be used in animal fodder but further trials are necessary to determine all the aspects of the matter more thoroughly.

REFERENCE

1. Pfirter H.P. UFA Winterthur report : Versuchsbericht über die Prüfung von HEFE der Firma PHILIP MORRIS als Bestandteil von Geflügelmastfutter (March 25 1981)

H. Friedrich

Friedrich-H

KPA/sde/APRIL 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 1

PERIOD COVERED : MARCH 26 - APRIL 27 1981

WRITTEN BY : Singer-Z. (ZDS)

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233 COUNTRY DB PRODUCT TEST

Objective

To develop a diluted version of the MARLBORO Germany in order to reduce the CO-delivery in the mainstream smoke.
K = 13 mg/cig.
N = 0.8 mg/cig.
CO-reduction : about 20 %

Summary

Three alternatives of MARLBORO OB should have been introduced in the product test :

Current undiluted MARLBORO MLK 21
Current diluted MARLBORO MLK 12
Diluted prototype 31 T

Description of samples and results

The samples of the product test cigarettes were analysed in FTR Neuchâtel and taste evaluated by Panel A. The evaluation may be summarized as follows :

MLK 21, MLK 12 — The analytical figures correspond to the standard.

Prototype — The analytical figures are within the target values.

However, as far as the organoleptic characteristics are concerned, there is a great difference between the packed and unpacked cigarettes. (The cigarettes for the test were packed in HL white, coded packs).
Only the packed cigarettes are harsh and they give a strange off-taste. These cigarettes cannot be used for the test. The problem has already been discussed with Mr. W. Tessendorf

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

and Mr. W. Janke from PMG Germany. The checking programme has been established.

Follow-up

The new timing for the product test has been decided upon and approved.

365 BARBARA PRODUCT TEST IN GERMANY

Objective

K = 13 mg/cig.
N = 0.9 mg/cig.
Puff count : 9

Summary

The test was entirely prepared in PMG Munich. Some technical problems were encountered during the production of the cigarette prototypes. In order to avoid any problems which could postpone the launching of the cigarette, the cut-filler and the necessary raw materials will be shipped from FTR Neuchâtel.

Description of samples and results

The trial was made with tobacco destined for Germany. It should be noted that the previous prototype 7 C 1 was successfully reproduced.

365 LOLITA

Objective

To develop a full-flavour cigarette having taste characteristics close to those of the L & M brands.
K = 10 mg/cig.
N = 0.8 mg/cig.
Format : 7.95 / 25 / 84.4 mm

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Summary

Prototypes 52 P and 63 P (containing CF) will be product tested in Germany.

Description of samples and results

Prototype No	52 P	63 P
Blend	------- MLZ -------	
Burley casing	----- E BC 2 ------	
Burley Top Flavour	----- E TF 3 ------	
PC	----- E PC 2 ------	
AC	E AC 38	E AC 68
Filter	------- PSP -------	
Cigarette paper	--- Ecusta 753 ---	
Tipping paper	Electro-perforated Z4/80	

Follow-up

The product test will be prepared in PMG Munich.
The cut-filler and the necessary raw materials will be shipped from FTR Neuchâtel.

340 GAMMA

Objective

Blind product test in Germany.

Summary

After some technical problems, the good quality PMS was finally reproduced (See table of results : Project PITCH III).
The product test was dispatched during week 21.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

402 PITCH III

Objective

TAR : 3 mg/cig.
SN : 0.3 mg/cig.
Format : 7.95 / 25 / 84.4 mm
Taste direction : GAMMA

Summary

The 3.0/0.3 product (prototype 8 P) is now available. It differs from the current PHILIP MORRIS SUPER LIGHTS in the filter tow and type of tipping paper perforation used. This prototype was presented to the German Marketing Department and should be introduced in the product test in Germany. The filter rods and tipping paper have already been shipped to Munich.

Description of samples and results

A trial was carried out with a double filter. The analytical figures were within the objective :

Prototype	8	11 P	PMS *
Tipping paper	4xM. 0.3.3.5	6xM. 0.15.4.5	6xM. 0.15.4.5
Filter	2.5Y/55'000	2.5Y/48'000/ DICO	2.5Y/48'000
Dilution	60	50	56
Total RTD	100	104	94
Filter RTD	129	116	105
TAR	3.0	3.2	4.2
SN	0.3	0.31	0.42
CO	4.4	5.3	5.9
NO	0.08	0.10	0.11
Puff count	8.1	7.7	8.4

* : The production of April 8th 1981.

Prototype 11 P was taste evaluated by the expert Panel A. In their opinion, this cigarette is better than prototype 8 and could still be considered as a PMS.

Follow-up

Cigarette samples of prototypes 8 and 11 have been sent to the German Marketing Department. Our recommendation is to market test prototype 11.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

416 PRINCE

Objective

K : max. 14 - 15 mg/cig.
N : 0.8 - 1 mg/cig.
Format : 7.95 / 20 / 84.4 mm

Summary

The development will be based on the new blend No D801416N25 containing :

Reconstituted	14 %
Added stems	14.5 %
Flue-cured	45 %
Burley	21 %
Orient	5.5 %

In order to achieve equal or similar qualities to those of the aimed competitive brand, the tobacco will undergo different treatments.

	Genre MAA	Genre MLF		
Burley casing	without Burley treatment	E BC 19	E BC 18	E BC 18
Burley Top Flavour		E TF 3	E TF 3	E TF 3
Pre-cut	E PC 6	E PC 7	E PC 7	CD 4A PC

Using the Smoke Yield prediction programme, the theoretical tobacco weight and the analytical figures of the reference cigarette have been calculated. Our target K/N ratio is about 16 whereas the theoretical ratio is about 8. It is known that the TAR/SN ratio is not influenced by the efficiency of the filter used. In view of the relatively high figures, the cigarette will not be diluted. According to this calculation, is should be pointed out that probably one of the target parameters (K or N) will not be within the objective.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

355 GOSTA I SW
361 GOSTA II SW

Objective

To develop an ultra-low tar cigarette for the Swedish market.
Format : 7.25 / 20 / 78 mm

Description of samples and results

In view of the launching of GOSTA I and II in September 1981, both cigarettes have been repeated. The analytical figures and the taste characteristics were confirmed.

		GOSTA I	GOSTA II
Filter		Dual/Filtrona	Dual/Baumgartner
Cigarette paper		Wattens 60	Pela 54
Tipping paper		Macro-laser perforated 4 M. 3.0.0.0	Mechanically perforated 3 x 0.4 x 0.4
Total weight		752	772
Total RTD	mm WG	56	97
Dilution	%	78	51
DPM	mg/cig.	1.3	4.6
SN	mg/cig.	0.22	0.47
CO	mg/cig.	2.7	6.3
NO	mg/cig.	0.06	0.16
Puff count		8.4	7.6

Follow-up

The specifications of both cigarettes will be established.

000144453

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

390 BELMONT MULTIFILTER

Objective

To develop a diluted version of the BELMONT MULTIFILTER in order to reduce the smoke delivery.

Description of samples and results

The cigarette samples of the first diluted BELMONT MULTI-FILTER production were analysed in our laboratory during weeks 14 and 15.

Total RTD	mm WG	88
Dilution	%	17
Tobacco weight	mg/cig.	683
Compressibility	mm	4.51
DPM	mg/cig.	12.6
SN	mg/cig.	0.78
CO	mg/cig.	11.3
NO	mg/cig.	0.13
Puff count		7.1

The tobacco weight was 75 mg lower than specified. Apart from being the cause of the poor general aspect of the cigarette, this difference also brings about changes in other parameters (such as compressibility, dilution, RTD, DPM and puff count) so that they no longer conform to the standard. The people concerned (SOPA, local Marketing) have already been informed and asked to take immediate action in order to bring the quality up to the standard.

358 VOITTO SF

Objective

To re-engineer the existing BELMONT NO 1 in order to bring the product more in line with the BELMONT family.

Description of samples and results

Based on the PMS blend, a first series of four prototypes was made using the double filter of high retention capacity. None of these prototypes achieved the target TAR value of 1 mg. In order to increase the dilution, the filter should be produced with higher porosity plug-wrap paper.

ZDS/cap/APRIL 28 1981

000144454

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 2

PERIOD COVERED : MARCH 26 - APRIL 30 1981

WRITTEN BY : Frattolillo-A. (ANF)

375 TENNIS 100'S

Objective

a) To evaluate the physical, chemical and organoleptic characteristics of the current MARLBORO blend UK supplied by the different production centres, by using the construction of MARLBORO 100'S and flavoured filters.
b) To determine the optimum tobacco weight for the MARLBORO 100'S UK for the issue of the final production specifications.

Description of samples and results

Tobacco cut-fillers, used in the making of the current UK MARLBORO, were produced at Silvertown, Eindhoven and Weltab and sent to FTR for complete evaluation.
Before the making of cigarette prototypes, each cut-filler was analysed to find the quality of its tobacco strands.
The results of this evaluation are stated below :

CUT-FILLER DEGRADATION ANALYSES
SCREEN SIZE

Origin	No 10 % $\bar{x}6$	No 20 % $\bar{x}6$	No 30 % $\bar{x}6$	No 50 % $\bar{x}6$	Fines % $\bar{x}6$	Moisture % $\bar{x}6$	Filling power ml/10 gr at 12 % moisture $\bar{x}12$
Silvertown	52.1	36.6	8.8	1.5	1.0	14.7	42.0
Eindhoven	49.4	36.6	10.3	2.3	1.4	14.1	42.2
Weltab	44.2	39.0	12.9	2.7	1.2	14.6	42.0

00014455

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

By using the above mentioned cut-fillers, cigarette prototypes were produced in the 100 mm format and, for each of these prototypes, two different weights were selected and evaluated.
The results obtained on the above prototypes are given below.

Prototype No		1C1	1C1	1C2	1C2	1C3	1C3
Blend No		GB 0137501R02					
Origin		Silvertown		Eindhoven		Weltab	
Total weight	mg/cig.	1174	1150	1170	1140	1170	1146
Tobacco weight	mg/cig.	885	871	881	851	878	857
Compressibility at 12 % Moisture	mm	3.40	3.64	3.69	3.66	3.57	3.44
TAR	mg/cig.	14.4	14.0	16.3	15.7	14.8	14.6
SN	mg/cig.	1.29	1.29	1.44	1.42	1.32	1.32
CO	mg/cig.	14.1	14.0	14.1	14.8	14.0	14.5
NO	mg/cig.	0.17	0.16	0.15	0.14	0.18	0.17
Puff count		10.5	10.0	10.8	10.1	10.4	10.2

Comments

The results obtained on the degradation analysis show some significant differences in the quality of the tobacco strands between the three production centres. However, the Eindhoven cut-filler shows a better strand-size dispersion which indicates greater uniformity in the blend. A significant difference is apparent in the tar and nicotine deliveries, these being too low for Silvertown and Weltab while Eindhoven is right on target.
The organoleptic characteristics of the three prototypes were evaluated and the No 1 C 2 was preferred by the leaf experts because it is fuller in taste, uniform and pleasant to smoke. Based on this prototype, the final production specifications will be derived and issued to the production centres concerned.

0001444456

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Objective

To develop a MARLBORO for the UK having characteristics equal or similar to those of the Pan-European standards by using a special Richmond flavour system, on tobacco only, thus eliminating the use of flavoured filters, while conforming to the Hunter list.

Description of samples and results

To achieve the proposed goal, three cigarette prototypes were produced and standard MARLBORO blend UK with non-tobacco materials of the standard Swiss MARLBORO were used. From the above-mentioned tobacco blend three batches were processed, following application of different ingredients. For each batch, one cigarette prototype was produced, described and evaluated as stated below :

Prototype No		35 P	36 P	37 P
Blend No		-----	GB0120804N02	-----
Version		A	B	C
Cig. total weight	mg/cig.	1065	1070	1070
Tobacco weight	mg/cig.	835	840	838
TAR	mg/cig.	14.8	13.7	15.0
SN	mg/cig.	1.10	1.05	1.11
CO	mg/cig.	14.8	14.6	14.8
NO	mg/cig.	0.24	0.24	0.23
Puff count		9.1	9.1	9.1

The obtained analytical values are seen to be within the objective; only prototype No 36 P is low in tar and nicotine deliveries, the cause of which could be found in the too high tobacco moisture-content. Concerning the organoleptic qualities, the Leaf experts preferred prototype No 37 P version C, this being the best alternative among the three versions. This gives MARLBORO characteristics as fas as impact is concerned and it is bright like a typical MARLBORO, but lacks some fruity taste. This prototype is considered as being a good basis for continuing TENNIS development. In addition, we can say that the used of special RL (US) in the blend did not disturb the balance of the smoke organoleptic characteristics.
Based on prototype No 37 P version C, another three prototypes were made. For these, standard MARLBORO blend UK was used and the three new versions were produced following the construction of the above-mentioned prototype where only the concentration of the AC-solution was changed and some humectants replaced and all this respecting the Hunter list.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

The results of these trials are given in the table below :

Prototype No		41 P	42 P	43 P
Blend No		-----	GB0120804N02	-----
Version		D	E	F
Cig. total weight	mg/cig.	1040	1050	1030
Tobacco weight	mg/cig.	815	820	800
TAR	mg/cig.	15.3	15.1	15.6
SN	mg/cig.	1.11	1.13	1.19
CO	mg/cig.	16.0	16.5	15.9
NO	mg/cig.	0.23	0.25	0.23
Puff count		8.9	9.0	8.9

As the analytical values of the three prototypes were within the acceptability limits, they were then submitted to Panel A to be taste tested. The Leaf experts found prototype No 43 P version F to be the closest in taste and character to the Pan-European standards. However, the cigarette lacks some sweetness, therefore new trials will be undertaken to obtain the right candidate.

Comments

A meeting concerning the TENNIS situation UK was held in Lausanne on April 28th 1981 with the participation of UK product Coordination, RME Coordination, Leaf experts Lausanne and an FTR representative. The issue of this meeting has proven to be of realistic value; everyone agreed on the qualities of cigarette prototype No 43 P version F for which only some fine tuning is needed.
At this stage, it can be said that good progress has been made in the field of the TENNIS project.

ANF/cap/MAY 1 1981

00014458

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 3

PERIOD COVERED : FEBRUARY 25 - APRIL 29 1981

WRITTEN BY : Nagel-P. (PHN)

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266 HARVARD

Objective

To improve the taste quality of MURATTI 2000.
To decrease the smoke delivery to 6 mg TAR.

Summary

Prototype 131 P was product tested against the current MURATTI 2000. There were differences between the two test products in the blend, filter type and cigarette paper used. The tar delivery of the current product was 7.0 mg and that of the prototype 6.0 mg. The tar per puff was identical for both cigarettes (0.84 mg/puff). The purpose of the test was to determine the consumers' preference between the current MURATTI 2000 and prototype 131 in view of the replacement of the former.
The results of the test can be summarized as follows :
Only the smokers of MURATTI 2000 significantly preferred the current product. The other smokers accepted both cigarettes equally well.

Follow-up

In view of the test results, further development seems to be necessary. The new guide-lines will be established during the next meeting with the Marketing Department.

00144459

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

399 TEXAS

Objective

To develop an ultra-low tar cigarette of the air-cured type with the following characteristics :
TAR = 3.0 mg/cig.
SN = 0.3 mg/cig
CO < 5.0 mg/cig.
NO < 0.1 mg/cig.
Puff count : 7
Format : 7.95 / 25 / 79.4 mm

Summary

Prototypes Nos 10 P and 12 P are being tested in an "open" product test against BRUNETTE NO 3 (BRT). The results will be known by the end of April 1981.
In the meantime, a blind product test is being prepared. Prototypes Nos 10 P, 12 P and BRUNETTE NO 3 will be tested against SELECT NO 2. The three PM products for the test will be produced with the tipping paper whose aspect is similar to that of SELECT NO 2.
The test should be ready by May 8th 1981.

364 CALIFORNIA

Objective

1. To reduce the TAR delivery of MURATTI AMBASSADOR (MAA, MAK) to 10 mg/cig.
2. To adapt the PHILIP MORRIS MULTIFILTER 100'S to the new CALIFORNIA blend (containing 18 % of ET-1).
3. To reduce the TAR delivery of MPH to 11 mg/cig.

Summary

The new MAA, MPH prototypes Nos 6 P and 12 P were developed with CALIFORNIA blend containing 18 % of expanded tobacco. Both cigarettes have been accepted by the Swiss Marketing Department. Prototype 6 P was product tested against the current MAA. The prototype was slightly preferred to the current product.
Until now, only the expanded tobacco from PM USA has been used.

0000144460

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Description of samples and results

In view of the availability of the expanded tobacco from Onnens, trials have been carried out in order to compare the two expanded tobaccos.

Prototype No		6 C 1	6 C 2
Blend		CH0336401N02	CH0336402N02
ETNA		18 % ET-FC-US	18 % ET-FC-ONNENS
Tobacco analyses			
Total alkaloids	%	1.47	1.26
Reducing sugars	%	8.0	9.7
Nitrate-nitrogen	%	0.14	0.12
Ammonia-nitrogen	%	0.08	0.06
Smoke analayses			
TAR	mg/cig.	9.6	9.6
SN	mg/cig.	0.79	0.72
Puff count		8.2	8.1

Prototype No		12 P	12 C
Blend		CH0336401N02	CH0336402N02
ETNA		18 % ET-FC-US	18 % ET-FC-ONNENS
Tobacco analyses			
Total alkaloids	%	1.43	1.28
Reducing sugars	%	8.6	9.5
Nitrate-nitrogen	%	0.16	0.13
Ammonia-nitrogen	%	0.06	0.08
Smoke analyses			
TAR	mg/cig.	10.6	11.1
SN	mg/cig.	0.92	0.85
Puff count		10.9	10.6

Comments

As far as the analytical figures are concerned, there is a significant difference between the blend containing US ET and that using ET from Onnens.

ET-Onnens : TA % : - Δ 0.18
RS % : + Δ 1.3

The TA reduction is confirmed by a decrease in the SN figures.

Tastewise, there is no significant difference. The ET from Onnens will be used in the production of the new MAA, MPK, MAK and MPH cigarettes.

0001444461

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

278 EVEREST

Objective

To decrease the TAR delivery of FLINT to 6 mg.

Description of samples and results

In order to achieve the target value, trials were carried out with four different triple filters from Baumgartner and TEXAS blend No CH1239901N02 (containing 27 % of ET-CH).
Two versions of the blend were used :
Version A : without humectants
Version B : with humectants (propylene glycole 1 %, glycerin 1 %)

The filters used differ from each other in the paper tobacco-end section (plug 3) where the RTD and the plasticizer application rate have been changed.
The other non-tobacco materials are those of the current FLINT.
Among the prototypes produced, No 227 was selected by the expert Panel A as the best alternative to the current FLINT.
This will be submitted to the Swiss Marketing Department.

Prototype No		FLI 01	227 P
Blend No		FLINT	CH1239901N02(B)
TA	%	1.23	1.13
Nitrate-nitrogen	%	0.19	0.20
Reducing sugars	%	3.7	2.6
Format : diameter	mm	7.95	7.95
filter length	mm	20	20
cigarette length	mm	79.4	79.4
Total weight	mg/cig.	941	884
Tobacco weight at 12 % O.V.		666	589
Cigarette RTD	mm WG	103	108
Dilution	%	34	39
Cigarette paper		BDP 30	BDP 30
Tipping paper	%	4xM. 0.3.3.5	4xM. 0.3.3.5
Filter : type		Triple	Triple
tow		2.5Y/48-5.0X/ 40/SPA	2.5Y/48-5.0X/ 40-CAF 250
additive		Charcoal/ Meerschaum	Charcoal/ Meerschaum
RTD	mm WG	83	88
TAR	mg/cig.	7.0	6.1
SN	mg/cig.	0.50	0.43
CO	mg/cig.	9.6	8.4
NO	mg/cig.	0.12	0.12
Puff count		7.2	7.2

The cigarettes are smoked on a PM 20 ports.

0001144462

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

284 MARYLAND

Objective

To reduce the TAR delivery of the BRUNETTE DOUBLE FILTER (BRD) to 12 mg/cig. Puff count should be kept around 8.

Summary

In view of the Maryland tobacco situation, the blend composition had to be completely revised and a new leaf formula was established. Based on the latter, a cigarette following the standard BRD specifications was produced. Panel D found the cigarette with the modified blend to be similar to the current product. Since February 1981, the modified blend has been used for the current production of BRD and for development purposes.

Description of samples and results

In order to achieve the objective, trials were carried out with different cigarette papers and filters :

Cigarette paper : Pela 200 09
Brauenstein A 4 5030 E 75
Brauenstein BDP 30
Brauenstein BDP 15

Filter : BRD PC 108
2.5 / 48'000 Y / 5.0 / 40'000 X
3.3 / 55'000 Y / 5.0 / 40'000 X

None of these prototypes were within the aimed figures especially as for as the puff count was concerned (it was too low).
Another series of prototypes was made with the same blend but where the expanded stems (10 %) had been taken away.
From this series, prototype No 157 P was chosen because of its analytical figures and organoleptic characteristics.

000144463

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Prototype No		BRD 01	157 P
Blend No		CH1328404N02	CH1328405N02 without Esther
TA	%	1.12	1.20
Nitrate-nitrogen	%	0.29	0.24
Reducing sugars	%	2.8	3.1
Format : diameter	mm	7.95	7.95
filter length	mm	18	18
cigarette length	mm	79.4	79.4
Total weight	mg/cig.	997	980
Tobacco weight at 12 % O.V.		718	695
Cigarette RTD	mm WG	115	119
Dilution	%	22	20
Cigarette paper	%	Velin 1615	BDP 30
Tipping paper	%	Z3 / 60	Z3 / 60
Filter : type		Double (BRDPC - 108)	
tow		2.5 Y / 55-5.0 X / 40	
additive		------ Charcoal Active ------	
paper		------- FU - POV 40 L -------	
RTD	mm WG	70	74
TAR	mg/cig.	13.5	11.9
SN	mg/cig.	0.80	0.79
CO	mg/cig.	14.0	12.5
NO	mg/cig.	0.29	0.21
Puff count		8.5	8.1

The cigarettes are smoked on PMI 20 ports.

Follow-up

The prototype will be product tested against the current BRD

F. Nagel

PHN/cap/MAY 1 1981

000144464

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 4

PERIOD COVERED : MARCH 27 - APRIL 17 1981

WRITTEN BY : Toïmil-R. (RAT)

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405 GAMMA ULTRA

Objective

To extend the GAMMA family by a king-size American type cigarette having the following smoke yield :
TAR : 1.5 mg/cig.
SN : 0.15 mg/cig.

Summary

Following the presentation of prototypes Nos 15 P to 22 P to Committee B, a new series of samples was produced using two tobacco blends, different AC concentrations and three cigarette papers.

Description of samples and results

The two tobacco blends used in this new series of prototype Nos 23 P to 38 P were :

1) PMS tobacco with 25 % of ET Onnens
2) A new recipe of a tobacco blend having the following types of tobacco :

Blend code	FR0240501N02
FC	21 %
Burley	25 %
Orient	7 %
ET Onnens	27 %
Add. stems	20 %

These two tobacco blends were divided into two batches :

1) PMS 810 A and 810 B
2) The new recipe 811 A and 812 B

In these two batches, the AC concentrations are of 20 l / 1'000 kg of total blend for series A and of 26 l / 1'000 kg of total blend for series B.

0000144465

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

The analytical results of the most interesting prototypes are stated in the table below :

Prototype No		23 P	24 P	32 P	37 P
TAR	mg/cig.	1.7	1.5	1.6	1.6
SN	mg/cig.	0.19	0.17	0.14	0.15
CO	mg/cig.	2.7	3.4	1.8	3.1
NO	mg/cig.	0.06	0.06	0.04	0.06
Total aldehydes	mg/cig.	0.3	0.3	0.2	0.4
Puff count		8.6	8.1	8.3	9.3
Dilution US	%	68	68	75	70
Filter		Double*	Double*	PMS	Double
Cigarette paper		110-6	708	708	W 20

* : PME code : 34.5565-D

Prototypes Nos 23 P, 24 P and 32 P were produced using the PMS tobacco blend of series B (26 l / 1'000 kg of AC).

In this series, the 4 M. 2.0.1.1 tipping paper from Malaucène was used in order to obtain the high dilution level necessary for this type of product.

Committee B recommends prototype 23 P to be presented to the Marketing Department of Area III.

404 ALFA

Objective

To re-engineer the MERCEDES KS brand in order to obtain the following smoke yield :
DPM : $\leq$ 16 mg/cig.
SN : $\leq$ 1 mg/cig.

Summary

In March 1981, the first series of prototypes was repeated with 100 mg greater tobacco weight in order to reproduce the same conditions of the current production of MEK in Italy.

00014466

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Description of samples and results

This new series of prototypes with 100 mg greater tobacco weight than the current specifications of MERCEDES was analysed and taste evaluated.
Two prototypes were selected by Panel A. They will be presented to the Marketing Department of Area III with the following planned modifications :

1st phase (short-time) (using-up of current filters)

Combination of the current raw materials (tipping and cigarette papers, filter) with a new recipe of tobacco blend (IT0340401N02).

2nd phase (long-time) (after using-up of MEK filters)

A new double filter with 30 % less Silicagel and the mouth-end plug having a 2.5/48'000 Y tow instead of the former 5.0/46'000 I.
The other raw materials will remain the same as those of the 1st series.

389 EXIT

Objective

To reproduce the dilution system of the BARCLAY cigarette.

Summary

In order to find a Pan Europe-type blend for this project, different prototypes were produced using three tobacco grades (Orient, flue-cured and burley) and two filters received from the USA (4 and 6 grooves). They were taste evaluated by the expert panel.

Description of samples and results

Except for the flue-cured grades, pure tobacco grades combined with the EXIT dilution system did not seem to be influenced by this system.
On this basis, cigarettes with filters having 4 and 6 grooves were produced with the following blends :

0000144467

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Filter 4 grooves	:	Blend MLF
Filter 6 grooves	:	Blend MLF
Filter 4 grooves	:	Blend PMS
Filter 6 grooves	:	Blend PMS
Filter 4 grooves	:	Blend PMS + 30 % of AC (PMS)
Filter 6 grooves	:	Blend PMS + 30 % of AC (PMS)

Among these blend combinations, the expert panel preferred the filters having 4 grooves.

Follow-up

The development of this project will continue with an MLF-type blend without expanded stems and without expanded tobaccos.

A study on other blends will still have to be made (MAA, MEK, BSZ, CAMBRIDGE), as well as on the expanded FC tobacco.

RAT/cap/APRIL 28 1981

0001444468

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : CIGARETTE DEVELOPMENT 5

PERIOD COVERED : FEBRUARY 25 - APRIL 27 1981

WRITTEN BY : Du Bois-J.-H. (JHD)

386 COCONUT

Objective

DPM : 14 mg/cig.
CO : lower than 10 mg/cig.
The other characteristics remaining, if possible, the same.

Description of samples and results

8 Prototypes were produced with the Costar-transtube filters from Filtrona and different tipping papers.
The last prototype (13 P) gave the following figures :

DPM	mg/cig.	18.2
SN	mg/cig.	1.31
CO	mg/cig.	11.4
Dilution	%	31
Puff count		9.9
RTD	mm WG	60

The dilution of 31 % was achieved using a mechanically-perforated tipping paper (3 lines 0.4 x 0.4).
It will become difficult to reach the necessary dilution of 45 % because the RTD of the transtube segment is very low.

Follow-up

Filtrona filters with a more porous plug-wrap will have to be ordered.
As far as tipping paper is concerned, macro-laser perforation will be used as a last resort.
Trials have been ordered with dual Filtrona filters having a higher RTD and a cone-shaped section in the NWA segment.

0000144469

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

E U C

Objective

- To establish a detailed study of our 1980 activities concerning "Marketing / Operations" and R & D projects.
- To study a system of planification which would enable each person concerned to know which things have to be done and when.

A cost calculation for the project has been made and gives the figure of SF 2'900.- / prototype.
The planification part of the project has not been advanced as planned. This is mainly due to the fact that the necessary literature and planning forms ordered from the States have not yet been received. They should be available within 3 weeks.
A crude net-work has been made and must be refined before conclusions can be drawn.

SIMULATION

A prototype based on the calculated figures given by the Support Group has been ordered and the analytical results will be available within a week.

JHD/cap/APRIL 28 1981

0000144470

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : MATERIAL DEVELOPMENT

PERIOD COVERED : MARCH 25 - APRIL 29 1981

WRITTEN BY : Erkohen-E. (ELE)

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1. CIGARETTE PAPER

Glatz 130 Molettevergé

Objective

Reduction in CO in MLF and MLK brands through the use of cigarette paper.

Summary

In October 1980, during the technical meeting with J. Glatz Papierfabriken, they informed us that they were able to produce cigarette papers that could reduce the CO values. It was decided during that meeting that we would send them the specifications of WP-60 paper used on Marlboro-CH brands, so that they could produce a paper with similar characteristics. We received the samples, and the analyses made on the physical characteristics did not show any significant difference from the standard WP-60 paper (Ref. 1).

Description of Samples and Results

In order to see if there is an appreciable decrease of CO without any change in tar and SN deliveries, MLF-CH cigarettes were made with the sample paper and compared to standard MLF-CH cigarettes. The dilution level achieved with the sample cigarettes is comparable to the standard (20%). The results of the smoke analyses have not yet been received.

Follow-up

As soon as the results of the smoke analyses are available and providing that a noticable decrease in CO (without any change in tar and SN levels) is achieved, the cigarettes will be submitted for taste evaluation.

0000144471

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

2. STUDY

DILMA

Objective

Prediction of the type of filtration material to be used on a prototype in order to achieve the desired level of dilution and smoke deliveries.

Introduction

In recent years there has been an increase in the use of ventilation in the design of cigarettes. With ventilated cigarettes it is possible to achieve major reductions in all smoke components including those of the gas phase. The effects of dilution are not entirely a straight reduction of smoke components, as some are enhanced and others decreased in the effluent smoke stream. It is recognized that this dilution depends upon an interrelationship of a number of factors such as the RTD of the filter tip, the permeability of cigarette paper, tipping paper, filter plug wrap, the resistance to the influx of air through the tipping and filter plug wrap and the RTD of the cigarette column. One of the major problems encountered today in our New Product Development Department is the choice of filtration material to be used in a new brand in order to achieve the desired degree of dilution, smoke yield parameters and the total cigarette RTD. This increased interest in predicting the degree of dilution of a cigarette effected by ventilating the filter has led us to the development of a first model.

Description of the Model

The brief description of the model is given in the block diagram (Fig. 1).

Follow-up

A detailed description of the model will be published as soon as the testing phase is finished.

Reference

1. Erkohen-E Monthly Report pp 25-27 (March 1981)

ELE/nod/APRIL 30 1981

0001447 2

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

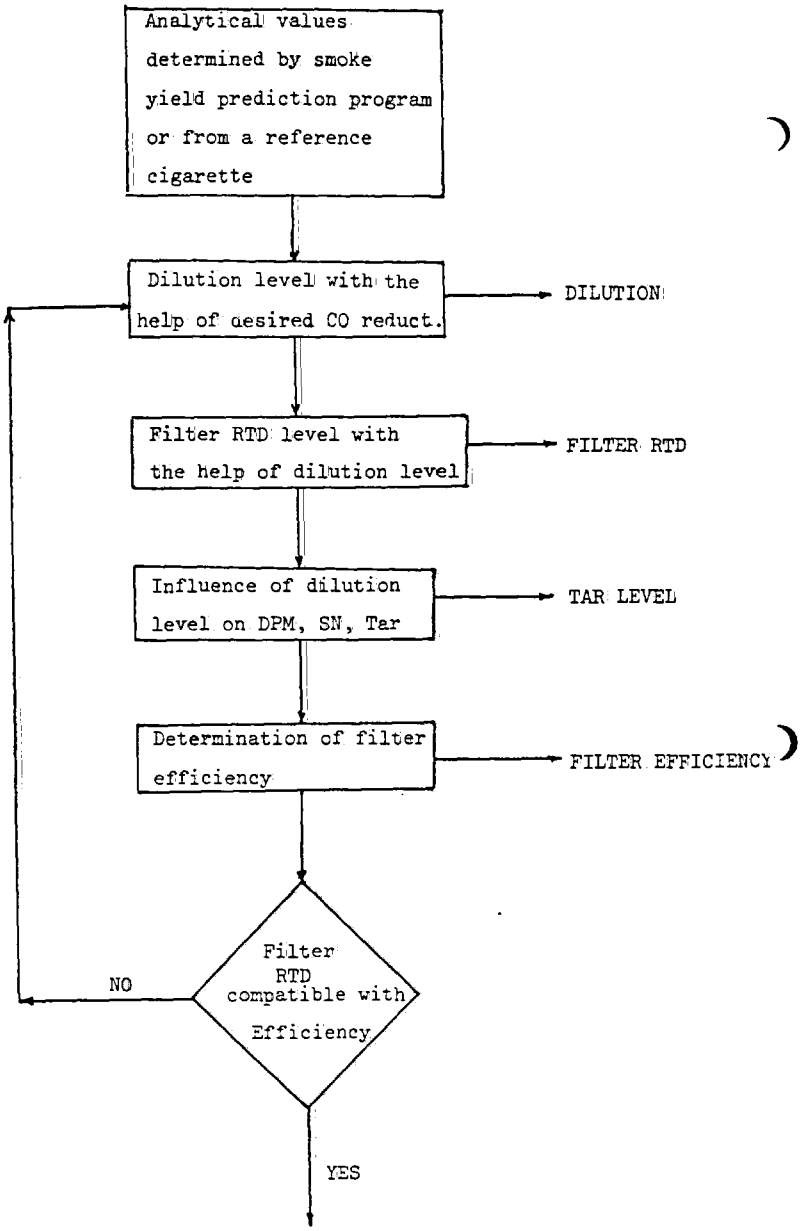

FIG I

0001444473

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : TOBACCO STUDIES

PERIOD COVERED : MARCH 30 - APRIL 30 1981

WRITTEN BY : JOSEPH-L (LIJ)

TOBACCO LOT ANALYSES

Introduction of Inputs on EDP

Partial analytical results of sixteen lots were introduced in the PME Analytical Data List.

Lots under Evaluation

Fifty-seven.

Lots available, but not yet analysed

Thirty-seven lots.

ASSISTANCE TO OTHER PROJECTS

LEAR

Objective

Denitration of strips by fermentation in order to decrease the NO delivery of the cigarettes.

Overview

We have received one sample of a blend of denitrated burley strips. The analyses are under way.

SAVOURY

Objective

Creation of a burley flavour from Ninomass.

Comments

No significant differences were found between the analyses of flavoured and unflavoured samples.

00014474

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

COMPETITORS' BRANDS

Due to a suspected change in the blend of SELECT MILD AROMA (previously similar to the blend of SELECT No. 2), we analysed TLA handmade cigarettes. Compared to the TLA cigarettes of SELECT No. 2, the main changes were:

- a higher RS level (+290%)
- a lower NO_3-N level and NO delivery in mg/g of burnt tobacco (-52%)
- a higher DPM delivery in mg/g of burnt tobacco (+26%)
- a similar TA level but a lower SN filter to SN_{MS} ratio (-28%).

The SN filter efficiency for this blend is characteristic of an American or European blend, whereas that of the SELECT No. 2 blend is characteristic of an air-cured Maryland blend.

BARBARA

We have checked the blends of the BARBARA project in order to see whether we could find the reasons for the discrepancy observed between the NO_3-N level found on blend No. DB Ø1365Ø2 made at FTR and at Munich. No conclusions can be drawn at this time due to insufficient analysed lots introduced in the TLA data bank.

SCOTCH

Objective

To determine the influences of dilution on smoke deliveries.

Summary

We have collected the results of several prototypes in the diluted and undiluted form, ie we taped a diluted cigarette to make the undiluted version. These cigarettes were made with different types of filters, different formats and different kinds of blends.

Overview

As a first step, we determined the smoke delivery reduction in comparison with the undiluted cigarettes:

$$Rs = \frac{S_{DN} - S_{DD}}{S_{DN}} \times 100$$

Rs = Smoke delivery reduction (%)

S_{DN} = Smoke delivery of undiluted cigarettes (mg/cig)

S_{DD} = Smoke delivery of diluted cigarettes (mg/cig)

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

As a second step, we correlated this smoke delivery reduction with the FTR and US dilutions. The squared correlation coefficients obtained are between 0.78 and 0.93.

For the CO we have:

% of CO reduction = 1.78 x FTR dilution - 7.0

% of CO reduction = 1.21 x US dilution - 8.7

The standard error of estimate is $\pm$ 4%.
The squared coefficient of correlation is 0.90.
The number of observations is 37.

For the NO we have:

% of NO reduction = 1.48 x FTR dilution - 6.4

% of NO reduction = 1.01 x US dilution - 7.8

The standard error of estimate is $\pm$ 5.3%.
The squared coefficient of correlation is 0.78.
The number of observations is 37.

For the DPM we have:

% of DPM reduction = 1.41 x FTR dilution - 3.4

% of DPM reduction = 0.96 x US dilution - 4.8

The standard error of estimate is $\pm$ 5.1%.
The squared coefficient of correlation is 0.93.
The number of observations is 31.

For the SN we have:

% of SN reduction = 0.907 x FTR dilution- 2.1

% of SN reduction = 0.617 x US dilution - 3.0

The standard error of estimate is $\pm$ 5.8%.
The squared coefficient of correlation is 0.81.
The number of observations is 29.

For the puff count we have:

% of puff count increase = 0.475 x FTR dilution - 1.1

% of puff count increase = 0.323 x US dilution - 1.5

The standard error of estimate is $\pm$ 3%.
The squared coefficient of correlation is 0.81.
The number of observations is 29.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

For the HCN we have:

% of HCN reduction = 1.35 x FTR dilution + 15

% of HCN reduction = 0.92 x US dilution + 14.

The standard error of estimate is $\pm$ 6.8.
The squared coefficient of correlation is 0.87.
The number of observations is 29.

For the aldehydes we have:

% of aldehyde reduction = 1.14 x FTR dilution + 5.5

% of aldehyde reduction = 0.774 x US dilution + 4.4.

The standard error of estimate is $\pm$ 5.7%.
The squared coefficient of correlation is 0.87.
The number of observations is 29.

The relationships for the CO and NO reductions are only valid between 10 and 40% FTR dilution and between 15 and 55% US dilution.

The relationships of DPM, SN, puff count, aldehyde and HCN reductions are only valid between 10 and 50% FTR dilution and between 15 and 70% US dilution.

Comments

The US dilutions were not measured but calculated from the FTR dilution results with the relation:

US dilution = 1.47 x FTR dilution + 1.44 (1)

In this study we had many different kinds of cigarette formats, filters and blends. This fact partly explains why we sometimes obtained a relatively high standard error of estimate. However, in some cases the intercept appears surprising; it does not go through the origin of the axes. This is due to the limited range of dilution covered by these relationships.

Follow-up

We will continue this study with some highly diluted production cigarettes such as Belmont No. 1, Flint Ultra, Brunette No. 3, etc and some highly diluted prototypes. We will also cover the low dilution range, in order to get a complete idea of the influence of dilution. This will be very useful for CO and NO reductions because, at this time, we only have three observations above 25% FTR dilution.

00014427

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

SMOKE YIELD PREDICTION

Objective

To create a mathematical model to predict the smoke delivery of a blend in a reference cigarette (TLA type) on the basis of the tobacco lot analyses.

Overview

A rough model has been developed in order to predict the tobacco weight of a theoretical cigarette at 12% moisture content and 3.25 mm firmness with a rod volume of 3.217 ml, as well as the CO, NO, DPM and SN deliveries and puff count of such a cigarette.

This model has been checked on the Spotless and Barbara blends. A special report is being written.

Reference

1. Pittet-M Letter re "Corrélation appareil RTD-DIL PME avec appareil PDI-DDI" (February 16 1981).

LIJ/nod/MAY 7 1981

ϕ00014478

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : MATERIAL TESTING

PERIOD COVERED : MARCH 26 - APRIL 20 1981

WRITTEN BY : Balliger-P. (PBA)

POROUS PLUG WRAP

Brodano BOP 0975 (2nd generation)

In order to diversify our suppliers of porous plug wrap for use in diluted Marlboro, Brodano was asked to supply us with samples of 20 - 40 - 60 K wrap for evaluation purposes.

This was done in order to make available a range of plug wraps of the same composition but of different porosity level. This in turn would enable us to quickly correct any possible variations in the smoke yield.

However, during a recent visit to Lausanne this supplier informed us that, at the present time, he is only able to propose one version of intermediate porosity (27,5 K).

Tests will be carried out in the near future to see whether this quality could be suitable for the MLF-CH.

CIGARETTE PAPER

JOB 478 Velin

The results of the physical tests carried out showed that the quality of this paper corresponded almost exactly to the quality of the Standard Braunstein 1615 which is currently used for BRD.

Nevertheless, despite the fact that the smoke yields obtained with sample BRD cigarettes were satisfactory, this alternative BRD cigarette paper is not recommended for reasons of taste.

FILTRATION MATERIAL

Amcel

In order to have a greater choice of acceptable suppliers of a given filtration material, Amcel was contacted and they suggested the following versions:

1. 2,5/55000 Y
   Similar quality to Eastman tow currently used in the diluted MAA group

00144479

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

2. 2,5/48000 Y
   Similar quality to Eastman tow currently used in MER

3. 5,0/46000 I
   Similar to Eastman tow currently used in MLH

4. 3,0/43000 Y
   Similar quality to Rhodia tow currently used in MLK-DB
   produced by PMG - Berlin

Some of these materials are already being tested; the others will be tested in the near future.

PBA/edk/APRIL 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : CIGARETTE AND SMOKE ANALYSIS

PERIOD COVERED : MARCH 25 - APRIL 20 1981

WRITTEN BY : Senehi-F. (SEF)

COMPARATIVE RESULTS OF THE OFFICIAL LABORATORY OF THE "CANTON DE VAUD" (Dr. AUBORT) AND QA PME

The following table shows the tar and SN results obtained by Dr Aubort, compared with those obtained by QA PME on the same samples.

	Dr.Aubort		QA PME		Printed values	
	Tar	Nicotine	Tar	Nicotine	Tar	Nicotine
Brunette Double Filtre	14,1	0.83	14,2	0.82	14	1,0
Brunette Extra	5,0	0,37	5,0	0,35	6	0,5
Brunette No. 3	2,4	0,23	2,3	0,25	3	0,3
Flint Soft	7,2	0,58	7,7	0,56	7	0,6
Flint KS Box	6,8	0,49	7,4	0,53	7	0,6
Muratti Ambassador Box	11,9	0,91	11,5	0,88	12	0,9
Muratti Ambassador Extra	5,1	0,38	4,7	0,38	5	0,4
Marlboro Box	15,9	1,18	16,0	1,13	16	1,2
Marlboro KS	15,3	1,18	15,2	1,14	16	1,2
Marlboro 100'S	15,6	1,30	16,0	1,18	17	1,2
Average	9,93	0,75	10,00	0,72		

Table 1 :
Comparative results of Dr Aubort and QA PME.

Dr. Aubort used a Filtrona 302 smoking machine (8 ports) and on average found practically the same Tar and SN values as QA PME who used a Filtrona 300 smoking machine (20 ports).

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

COLLECTIVE TEST CARRIED OUT BY THE THREE PM LABORATORIES MUNICH, EINDHOVEN AND NEUCHATEL

Each laboratory analysed 120 cigarettes of each of 3 brands in order to find out whether a deviation in DPM and smoke nicotine exists and if so, for what reasons.

The following table shows the results of this collective test (ref. 2):

	Dry Particulate Matter DPM (mg/cig)			Smoke Nicotine SN (mg/cig)		
	Munich	Eindh.	Neuchât.	Munich	Eindh.	Neuchât.
MLK 21	16,8	16,6	16,4	0,88	0,95	0,97
MER 03	8,4	8,7	8,4	0,52	0,56	0,54
M 20	18,5	18,2	17,8	1,06	1,11	1,12

Table 2:
Collective test carried out by the three PM laboratories on three different brands.

The results obtained by the three laboratories on DPM are practically the same, but the Munich results tended to be on the high side and Neuchâtel results on the low side.

Concerning the SN results, we observed that Munich systematically obtained lower results than Eindhoven and Neuchâtel. It seems that this deviation is due to incomplete extraction of the cambridge filter. A collective test will be made between Munich and Neuchâtel to confirm this supposition.

PRODUCT REPORTS

Product reports were written on the following new or modified brands:

Brands	Manufacturer	Country of Sale
Jean Bastos 79/F (national relaunch,redesigned pack)	Badische T.	West Germany
Belvedere Int. de Luxe 84/F (relaunching in box, previously princess pack)	Austria DB	West Germany

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

Brands	Manufacturer	Country of Sale
Carrolls Original Virginia 94/F (new brand)	Imported by Tuxedo	West Germany
Topkapi 100/F (new brand)	Austria	West Germany
Winston Int. 90/F (new brand)	Reynolds	West Germany
Johnny 84/F (new brand)	Monital	Italy
Benson & Hedges Special Mild Aroma 84/F (new brand)	BAT	Switzerland
West 84/F (new brand)	Reemtsma	Switzerland

REFERENCES

1. Senehi-F report (April 13 1981)
2. Senehi-F report (April 14 1981)

SEF/edk/APRIL 27 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : QA ANALYTICAL SERVICES

PERIOD COVERED : MARCH 25 - APRIL 28 1981

WRITTEN BY : Widmer-A. (ALW)

METHODS

- The following method was added to the PME-method file:
  - Sieving of ground cocoa shells (Nr 138)
    The granulometry of ground cocoa shells is determined in four fractions (< 20 Mesh, < 40 Mesh, < 50 Mesh, and > 50 Mesh).

CASING KITCHEN

- Flavour 153 (Ref. 1)

  Flavour 153 (SFC 153) was accepted as a replacement of the individual ingredients of "super juice". Therefore, new preparation procedures were established for BSD-AC, MAB-AC and MERA-AC.

TRIALS WITH NEW SUPPLIES OF TOBACCO INGREDIENTS

- Diethylene glycol (SIEGFRIED S.A., Zofingen / yellow sheet 5962, 160 kg) -(Ref. 2)

  Due to difficulties encountered with the last shipment of this product, it was decided to order a small quantity for control.

  The product corresponded to our specifications.

  SFC 201(PHILIP MORRIS, Richmond/yellow sheet 5882, 400 kg)

  This product was submitted as an alternative to the MF-AC Base. Two industrial trials on MLF-CH cigarettes were organized:

  1. MF-AC solution according to the recipe applied in Richmond (with invert sugar)

  2. MF-AC solution according to the recipe applied in PME (without invert sugar)

  Smoking analyses: no significant difference between the standard and the two trials was observed.

  Subjective evaluation: a significant difference between the standard and the two trials was found. The trials were rejected.

  It is planned to repeat the trial.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

QUALITY CONTROL OF TOBACCO INGREDIENTS

- Liquorice extract (MAC ANDREWS & FORBES, Camden (USA) / blue sheet 8036) - (Ref. 3)

  Products containing more than 10 % of saccharose were put into a higher customs class. Therefore the specifications of Liquorice extract limit the permitted content of saccharose to 10.0 %.

  In a spot test the laboratory of the customs offices found a value of 11.9 % in a sample of the shipment. In our laboratory an anverage value of 7.0 % was found with three samples. The determinations were carried out by HPLC using lactose as an internal standard.

- MFSBC - Powder (PMG Berlin) - (Ref. 4)

  4 drums of the last shipment were mismarked: instead of "MFSBC-Powder" the drums were labelled "MFSB Base" together with the code number of "MF(S) Powder Base". The contents were identified as being "MFSBC-Powder".

TRIALS WITH NEW SUPPLIES OF FILTER COMPONENTS

- Methoxy polyethylene glycol 650 (HODAG CHEMICAL CORP., Skokie/USA/ yellow sheet 5963, 2 x 200 g)

  Methoxy polyethylene glycol having an average molecular weight of 650 could replace the mixture of methoxy polyethylene glycol 550 and 750.

  Two samples were submitted:

  The first sample was polimerized to obtain an average molecular weight of 650. In the laboratory an average molecular weight of 679 was found. The water-content corresponded to the specifications of Methoxy polyethylene glycol 750. The second sample was a physical blend of Methoxy polyethylene glycol 750 and 550. An average molecular weight of 659 was found. The water-content corresponded to the specifications of Methoxy polyethylene glycol 750.

  The purchasing department will clarify the commercial aspect before an industrial trial with one or both products is organized.

QUALITY CONTROL OF FILTER COMPONENTS

- Methoxy polyethylene glycol 550 (ex BP, Intertaba) - (Ref. 5)

  In some of the drums of a regular shipment a fairly pronounced yellow coloration of the product was observed. As regards chemical analyses, the product was within specifications.

  An industrial trial on MAE - cigarettes was organized.

  Smoking analyses: no significant difference between the standard and trial was observed.

  Subjective evaluation: no significant difference was found. The trial was accepted.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

- Methoxy polyethylene glycol 750 (BP, Zürich / blue sheet 8311/ 5000 kg)

  As regards chemical analyses the product was within specifications. However, in 7 drums (out of the total shipment of 24) a high amount of solid particules on the surface, sometimes with a yellow coloration of the product, was found. The drums in question were returned to the supplier.

- Triacetin (Project URQUELL) - (Ref. 6)

  The sample was largely out of specifications as regards water-content and colour (yellow coloration instead of colourless).

TRIALS WITH NEW SUPPLIES OF GLUES

- Glue for tipping paper (ex WIKOLIN/PMG Munich) - (Ref. 7)

  Based on the first promising results, a second industrial trial with 6 different types of glues on MLF-IT cigarettes was organized.

  Machineability: no significant difference to the standard was seen.

  Smoking analyses: no significant difference between the standard and the trials was observed.

  Subjective evaluation: The trial with type "5008/A33" was considered acceptable. All the other trials were rejected. In order to check the influence of type "5008/A33" on a "sensitive" cigarette a trial on PMS-FR will be organized.

- Glue for tear tape (FULLER GmbH, Lüneburg (BRD), "LUNAFLEX S 5 W"/ yellow sheet 5931 , 500 g)

  The glue did not give better results on the machine than the standard glue.

  Concluded on 23.02.81

SERVICES FOR OTHER GROUPS

- Analyses for foil mentholating
  Menthol on inner foil (25 samples)

- Analyses for product development
  Triacetin in filters (4 samples)

- Analyses for MONIQUE
  SiO_2 in dust (3 samples)

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

REFERENCES

1. Monthly report Widmer-A (August 1980)
   Letter from Schwarb-A to the Casing Kitchen (April 3 1981)

2. Monthly report Widmer-A (February 1981)

3. Letter from Widmer-A to Jeannottat-R (March 17 1981)

4. Monthly report Widmer-A (February 1981)
   Letter from Lutzig-B.W. to Widmer-A (April 6 1981)

5. Letter from Widmer-A to Schembri-A (March 3, 1981)

6. Letter from Widmer-A to Michaca M (April 21 1981)

7. Monthly report Widmer-A (December 1980)
   Letter from Widmer-A to Lutzig-B.W. (March 20 1981)

ALW/edk/APRIL 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : SPECIFICATIONS

PERIOD COVERED : MARCH 27 - APRIL 27 1981

WRITTEN BY : Flury-C. (CAF)

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1. Brand protection sales have been made by PMG Munich for Arizona - AXF 040.

2. PMG's Lark King Size cigarette - LAG 01 - has now the size 7,95 - 21 + 63 mm.

3. The first PMH mentholated cigarette, Armada - ARM - is now mentholated by means of menthol foil produced in FTR.

4. New packing specs are available for WELTAB's production of Marlboro for sale in France - MLF 225.

5. INTERTABA Zola Predosa have produced filter making specs for the standard porous 108 mm Ambassador filter.

6. All packing specs of ATO HYRYLAE (SF) have been updated, mainly due to the new numbers printed on the packs.

7. Project specs have been prepared for the projects
   - Urquell - Tchecoslovakia
   - Balinka - Hungary

8. Fourteen recipes and several general lists regarding the recipe file have been updated. Reference 1.

9. Eastman have accepted the PME material spec for the two tows 5,0/45'000Y and 2,5/55'000Y.

REFERENCES : 1. Monthly list of mutations in PME standard recipe book (MARCH 81)

CAF/caf/APRIL 27 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : PROCESS ASSURANCE

PERIOD COVERED : MARCH 28 - APRIL 30 1981

WRITTEN BY : Bel-T. (THB)

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15. Quality Workshop (reference 1)

- Each production center has been informed of the organization planned by Process Assurance.

  All graphs necessary to realize this project have been prepared and the first results for the period of January - March 1981 have been registered.

- Participation at the Engineers Meeting where several points corresponding to our programm "Improvement of the quality" have been discussed :

  - Gluing of cigarette seam
  - Embossing of the aluminium foil
  - Gluing of Hinge Lid packs

17. Doubtful products

Following the problems which arose in BOZ with Marlboro production, the undersigned is taking care of PME-coordination from the quality point of view as well as the organization of the different trials in FTR.

REFERENCES : 1. Quality Workshop
Bel-T. memo to local coordinators
(April 1981)

THB/amk/MAY 5 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE	:	INSTRUMENTATION AND PROCESS AUTOMATION
PERIOD COVERED	:	MARCH 23 - APRIL 22 1981
WRITTEN BY	:	Thévoz-M. (MIT)

1. Nitrate-Monitoring

In order to collect more information on short-term electrode stability, the main programme was slightly modified. A new graphic screen is now available which gives the response of the nitrate-sensor within the 60 seconds following the immersion of the module in the standard solution. This graph enables the operator to check that the preselected equilibrium time is suitable for the set of electrodes currently in use.

2. CO-NO Smoking Laboratory

The HP 9825 desk top computer used in this project works satisfactorily but electrical noises around the work places produce random stopping of the programme from time to time. Different levels of control and security have now been introduced in the sub-programmes involved in data acquisition. The different electrical lines and power supply will be protected and filtered if new problems are encountered within the next two months.

3. Automation of the Smoking Laboratory

The different output specifications of each instrument in the smoking laboratory are now being collected. Special attention is being given to the design and interfacing problems of the smoking machines. A set of programmes written in BASIC and in assembler is currently being tested for the multi-channel counters required for carrying out the puff-count. The number of electrical impulses received by each counter of the FILTRONA machine is now computed by software in order to reduce the amount of hardware required for each work place.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

4. Instrumentation

The US PDI/DDI instruments of PMG (Berlin and Munich) have been serviced by our group. A new cigarette holder was fitted in the instruments and a new front panel was fixed to the main frame. A comparison between these two instruments was made using 30 cigarettes of each of two brands (BRD and NPF). The results obtained are presented in Table 1 and they correlate fairly well. A final test with the same calibration capillaries gave a difference of less than 0.4%.

Cigarettes	PDI/DDI Instruments			
(30 cig.)	PMG BERLIN		PMG MUNICH	
	RTD	Dilution %	RTD	Dilution %
BRD	$\bar{X}$ = 112.8 S = 5.44	$\bar{X}$ = 20.50 S = 2.01	$\bar{X}$ = 116.8 S = 5.19	$\bar{X}$ = 20.40 S = 1.89
NPF	$\bar{X}$ = 107.93 S = 3.89		$\bar{X}$ = 110.07 S = 3.46	

Table 1: Comparison of RTD and dilution data between two PDI/DDI instruments.

MIT/jud/APRIL 23 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : PATENTS

PERIOD COVERED : APRIL 1981

WRITTEN BY : Mandiratta-J-C. (MJA)

U.S. FOREIGN PATENT COMMITTEE MEETING

This meeting was held on April 22, 1981, and was attended by Dr. Gaisch-H. and the undersigned. Details of this meeting will be discussed at our forthcoming PME Meeting to be held on May 13, 1981, in Neuchâtel.

PROJECT EXIT

A poor-man's opposition has been prepared by Dr. Hach for submitting the same to the West German Patent Office. This opposition was discussed during the U.S. Foreign Patent Committe meeting in Richmond on April 22, 1981, and it was decided to proceed in submitting the same after receiving final approval from New York Management.

CANDIDA "BRÜCKENZWEIG" - NEW APPLICATION

Details of this application have been given to Dr. Hach and a new application is being prepared by him for our approval. It has been decided to file a priority application in West Germany.

RENEWAL FEES

The renewal fees for the undermentioned patents have been paid this month :

West German Patent P 28 57 779.9
Case 28241
Reduction of Nitrates and Nitrites in Tobacco - Anaerobic Fermentation.

Swiss Patent Application 3852/79-0
Case 28220
Box for Cigarettes.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

West German Offenlegungsschrift P 29 16 372
Case 28219
Box for Cigarettes.

French Patent Application 78 14102
Case 28201
Reduction of Nitrates and Nitrites in Tobacco - Strip fermentation STRIPFERM.

Swiss Patent Application 4916/78-9
Case 28199
Same as above.

West German Offenlegungsschrift P 28 16 427
Case 28195
Same as above.

Australian Patent Application 34921
Case 28194
Reduction of Nitrates and Nitrites in Tobacco and reductionfermentation.

French Patent Application 78 13771
Case 28191
Same as above.

Belgium Patent 866 445
Case 28189
Same as above.

The Netherlands Patent Appliction 7804047
Case 28188
Same as above.

Luxemburg Patent 77272
Case 28170
Same as above.

Austrian Patent 334 805
Case 28105
Smokable Product with Meerschaum Particles.

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

West German Auslegeschrift P 26 36 316
Case A-28015/01
CS-Filter.

Swiss Patent 608 346
Case A-28015-CH-00
Same as above.

PATENT DOCUMENTATION

To date, 7200 documents are on the STAIRS system for patent documentation.

MJA/scm/APRIL 24 1981

0001444694

Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

PROJECT TITLE : LEGISLATION

PERIOD COVERED : APRIL 1981

WRITTEN BY : Fink-W. (WAF)

COUMARIN

- On February 20, 1981, Martin Brinkman AG, Bremen (BRD), was granted special permission to use coumarin on tobacco products in West Germany (1).

  The use of coumarin is limited to 100 ppm/cig. for a total of 10 billion cigarettes a year. The special permission is granted for the period of March 1, 1981, to February 28 1983.

- Deviation from Paragraph 2, Article 1 and Enclosure 1, No. 1 of the German Tobacco Ordinance of December 20, 1977, on March 23, 1981, PMG was granted special permission for the use of Coumarin in cigarette production in West Germany (2).

  The following injunctions are to be observed :

  The addition of coumarin may not exceed 100 ppm/cig. and the number of cigarettes produced with an addition of coumarin is limited to 8 billion per year.

  Particular points concerning this permission are :

  a) coumarin may be added only to those tobaccos which will be used in the production of cigarettes which may be advertised as "light" (Leicht-Abkommen of December 20, 1977).

  b) No reference may be made to this special permission neither in advertising nor in labelling.

  The special permission is granted for the period of April 1, 1981 to March 31, 1983.

REFERENCES

(1) GMBI 1981, Vol 31, p. 136.

(2) Letter from the Bundesminister für Jugend, Familie und Gesundheit to Philip Morris GmbH, Munich, dated March 23, 1981.

WAF/jig/APRIL 27 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000

T S OSBENE
MAY 30 1981

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Source: https://www.industrydocuments.ucsf.edu/docs/hghk0000